



Interpretemos gráficas de barras

Standards

Addressing 2.MD.D.10
Building Toward 2.MD.D.10


Instructional Routines

- MLR6 Three Reads
- Notice and Wonder

Goals

- Comprehend (in spoken and written language) the meaning of the term “bar graph.”
- Interpret (orally and in writing) data represented in a bar graph.
- Use the features of a bar graph to answer questions.

Student Facing Learning Goals

 Respondamos preguntas sobre datos de **gráficas de barras**.

Lesson Purpose

The purpose of this lesson is for students to interpret data in a **bar graph** in order to answer questions.

Narrative

In previous lessons, students learned how to interpret categorical data represented in picture graphs and other displays. In this lesson, bar graphs are introduced as another way to represent categorical data. Students compare the features of bar graphs to picture graphs and use the unique features of bar graphs to interpret data and answer questions. When students relate the data to the context it represents and carefully interpret the elements of a graph, they reason abstractly and quantitatively and attend to precision (MP2, MP6).

Access for Students with Disabilities

- Action and Expression

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Synthesis Estimate	10 min
Actividad de cierre	5 min

Teacher Reflection Questions

The scale of the bar graph will be important as students solve problems based on data. How did you see students using the scale on the bar graph today?



Warm-up

10 min

Observa y pregúntate: Mascotas favoritas

Standards

Building Toward 2.MD.D.10

Instructional Routines

- Notice and Wonder

The purpose of this *Warm-up* is for students to make connections between bar graphs and picture graphs. While students may notice and wonder many things about these graphs, focus the *Activity Synthesis* on how the graphs represent the same data in different ways. This conversation leads directly into the next activity, in which students will read and interpret data represented in bar graphs.

Student Task Statement



Student Response

Students may notice:

- One has pictures.
- They have the same animals.
- Dogs have the most in both graphs.

Students may wonder:

- Are they the same?
- Why doesn't the second one show the animals?

Launch

- Groups of 2
- Display the image.
- “¿Qué observan? ¿Qué se preguntan?” // “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discutan con su pareja cómo pensaron” // “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Activity Synthesis

- “La gráfica a la derecha se llama una gráfica de barras. Una **gráfica de barras** es una manera de mostrar cuántos hay en cada grupo o categoría usando la longitud de los rectángulos” // “The graph on the right is called a bar graph. A **bar graph** is a way to show how many in each group or category using the length of rectangles.”
- “¿Qué diferencias hay entre la manera en que se representan los datos en la gráfica de barras y la manera en que se representan en la gráfica de dibujos?” // “How is the data represented differently in the bar graph compared to the picture graph?” (The number of objects are shown on the scale on the left instead of in pictures. We don't have to count.)



Activity 1

Opciones para una excursión

Standards

Building Toward 2.MD.D.10

The purpose of this activity is for students to write true statements to show what they can learn about the data in a bar graph. In the *Activity Synthesis*, students match their peers' statements to the graph they think they came from and explain how they know using the features of the graph (MP2, MP3). In order to have a variety of different statements to share in the *Activity Synthesis*, look for ways to encourage students to write statements that combine multiple categories or compare categories. Share examples using the bar graph from the *Warm-up* as needed. For example, 8 total students liked fish or lizards as their favorite pet.

Access for English Language Learners

Action and Expression: Develop Expression and Communication. Provide access to different colored connecting cubes for students to represent the data when answering the questions. This offers a concrete representation of the two data points to focus attention on.

Supports accessibility for: Conceptual Processing, Organization, Attention

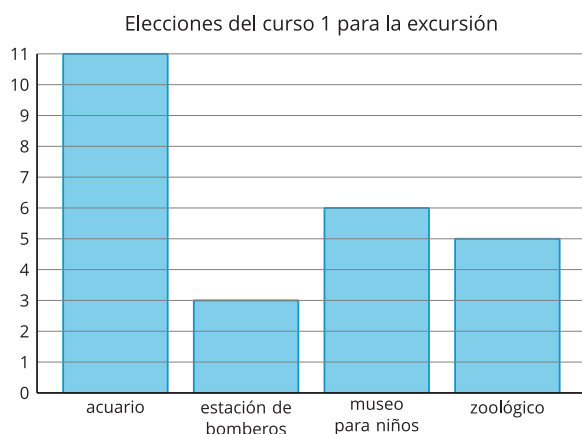
Student Task Statement

A varios grupos de estudiantes de diferentes cursos les preguntaron: "¿A dónde te gustaría ir de excursión?"



Sus respuestas se muestran en estas gráficas de barras:

Escribe todas las afirmaciones que puedas acerca de cada gráfica de barras.



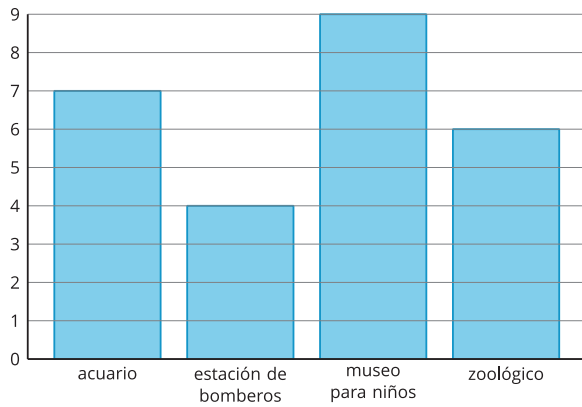
Launch

- Groups of 3
- Assign each group a graph to interpret.

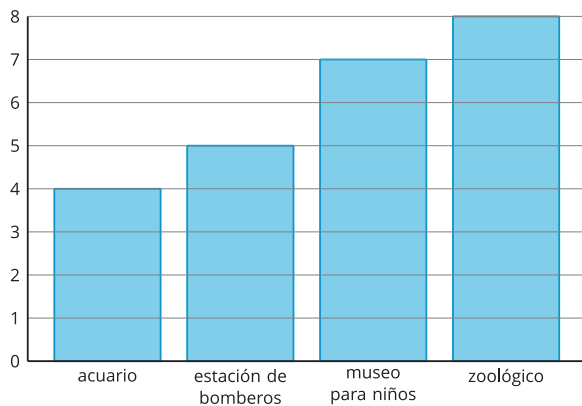
Activity

- "Con su grupo, observen la gráfica de barras sobre las elecciones de los estudiantes. Escriban tantas afirmaciones como puedan para mostrar lo que enseña la gráfica" // "With your group, write as many statements as you can to show what can be learned about the students' field trip choices from your graph."
- "Vamos a compartir con la clase las afirmaciones que escriban para ver si los demás pueden descubrir cuál gráfica interpretaron" // "We will share the statements you write with the class to see if they can guess which graph you interpreted."
- 8 minutes: small-group work time
- Monitor for students who create a variety of different statements, including those that combine or compare categories, to share during the *Activity Synthesis*. Choose at least 1 group for each graph.

Elecciones del curso 2 para la excursión



Elecciones del curso 3 para la excursión



Activity Synthesis

- Invite one of the previously identified groups to share 2–3 of their statements.
- “¿Qué gráfica interpretó este grupo? ¿Cómo lo saben?” // “Which graph did this group interpret? How do you know?”
- Repeat, varying groups that interpreted different graphs, as time permits.

Student Response

Sample responses for Class 1:

1. 25 students voted.
2. 11 students voted for the children’s museum or zoo.
3. The fire station got 3 fewer votes than the children’s museum.

Activity 2

🕒 20 min

Nuestras estaciones favoritas

Standards

Addressing 2.MD.D.10

Instructional Routines

- MLR6 Three Reads

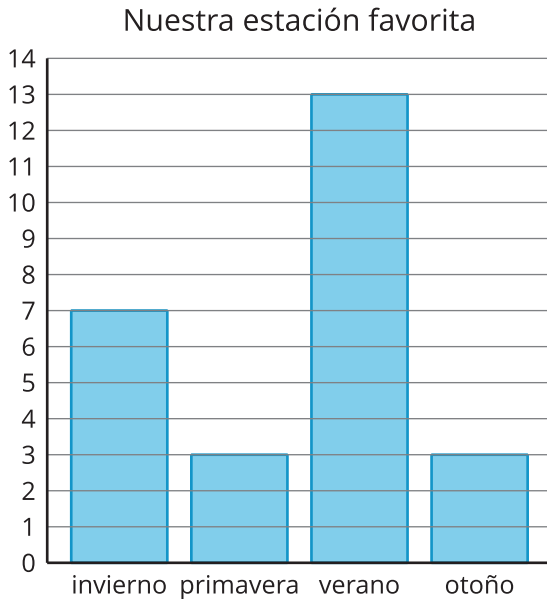
The purpose of this activity is for students to interpret data represented in a bar graph and answer questions about the data. In previous work with picture graphs, students had to count the pictures in order to answer “how many” questions. During this activity, identify students who recognize that they can use the scale (numbers on the side) instead of



counting each line or section of the bar. Ask these students to share during the *Activity Synthesis*. It is important for students to consider the benefits of using a bar graph compared to a picture graph. This activity uses *MLR6 Three Reads. Advances: reading, listening, representing*.

Student Task Statement

A un grupo de estudiantes le preguntaron: "¿Cuál es tu estación favorita?". Sus respuestas se muestran en la gráfica de barras.



1. ¿Cuántos estudiantes votaron por verano?
2. ¿Cuál es el número total de estudiantes que votó por otoño o primavera?
3. ¿Cuáles 2 estaciones tienen juntas un total de 10 votos?
4. ¿Cuántos estudiantes votaron?

Student Response

1. 13 students voted for summer.
2. 6 students voted for spring or fall.
3. Winter and spring have a total of 10 votes.
4. 26 students voted.

Launch

- Groups of 2
- Display "Our Favorite Seasons" bar graph, without revealing the questions.

Activity

MLR6 Three Reads

- "Esta es una gráfica de barras que muestra datos que se recolectaron sobre las estaciones favoritas de los estudiantes. Vamos a leer esta gráfica 3 veces" // "Here is a bar graph showing data collected about students' favorite seasons. We are going to read this graph 3 times."
- 1st Read: "Tómense un momento para leer los datos que muestra esta gráfica" // "Take a moment to read the data displayed by this graph."
- "¿Sobre qué es la gráfica?" // "What is this graph about?"
- 1 minute: partner discussion
- Listen for and clarify any questions about the context.
- 2nd Read: "Lean e interpreten la gráfica de barras una segunda vez. ¿Qué se puede contar o medir en esta situación?" // "Read and interpret the bar graph a second time. What can be counted or measured in this situation?" (number of students who voted for each season, number of students who voted)
- 30 seconds: quiet think time
- 2 minutes: partner discussion
- Record quantities on a display for all to see.
- 3rd Read: Read the question(s) aloud.
- "¿Cómo podemos usar la gráfica de barras para responder estas preguntas?" // "How can we use the bar graph to answer these questions?"
- 30 seconds: quiet think time
- 1–2 minutes: partner discussion
- "Usen la gráfica de barras para responder las preguntas" // "Use the bar graph to answer the questions."

- 7 minutes: independent work time
- Monitor for students who:
 - Count each section of the bars.
 - Use the scale.
 - Create equations to record how they combine categories.
- If some students finish early, you can ask them to write statements about what can be learned or other questions that can be asked about the data in the bar graph.

Activity Synthesis

- Invite previously identified students to share how they used the bar graph to find how many students voted for summer.
- Invite previously identified students to share how they found the total number of students who voted.

Lesson Synthesis

Display the bar graphs from the *Warm-up*.

"Hoy interpretamos datos representados en una gráfica de barras. Usar una gráfica de barras es un poco diferente a usar una gráfica de dibujos para responder preguntas" // "Today we interpreted data represented in a bar graph. Using a bar graph is a little different than using a picture graph to answer questions."

"Compara la manera en que usaron una gráfica de barras para responder preguntas y la manera en que usaron las gráficas de dibujos. ¿En qué son diferentes?" // "How are the ways you used a bar graph to answer questions different from how you used picture graphs?" (The bar graphs have a scale that helps you see how many are in each group without having to count each one. You really had to read the bar graphs to make sure you were counting the right thing because there weren't pictures that matched each group.)

"¿En qué se parecen?" // "How are they the same?" (They both show a number in each group. You can count each picture in a picture graph and you can count each part of the bar in a bar graph.)

Suggested Centers

- How Close? (1–5), Stage 3: Add to 100 (Addressing)
- Sort and Display (1–3), Stage 1: Any Way (Supporting)



Cool-down

5 min

Animales en el zoológico

Standards

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Student Task Statement

En un zoológico, un cuidador de animales contó el número de leones, guepardos, monos y cebras. Los datos del cuidador se muestran en esta gráfica de barras.



1. ¿Cuántos monos había en el zoológico? _____
2. ¿Cuántos leones había en el zoológico? _____
3. ¿Cuál es el número total de guepardos y cebras juntos? _____

Student Response

1. 8
2. 6
3. 7

Responding to Student Thinking

Students answer a question with an amount not represented by the graph.

Next Day Supports

During the *Warm-up*, have students use a ruler or straightedge to line up the rectangles with the scale to help them connect the number of sections in each bar to the numbers on the scale.

